Approval

TFT LCD Approval Specification

MODEL NO.: V260B1-P15

Customer: _____

Approved by: _____

Note:

Approved By	TV Head Division
	LY Chen

Reviewed By	QA Dept.	Product Development Div.
	Kc_Ko	WT Lin

Prepared By	LCD TV Marketing and Product Management Div.	
	CY Chang	Delia Lin

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REVISION HISTORY

Version	Date	Page (New)	Section	Description
Ver 2.0	Jun, 24, 2009	All	All	Approval Specification was first issued.

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1. GENERAL DESCRIPTION

1.1 OVERVIEW

V260B1- P11 is a 26-inch TFT LCD cell with driver ICs and a 1-ch LVDS interface. The product supports 1366 x 768 WXGA mode and can display true 16.2M colors (6-bits+FRC colors).The backlight unit is not built in.

1.2 CHARACTERISTICS

CHARACTERISTICS ITEMS	SPECIFICATIONS
Screen Diagonal　[in]	26.0
Pixels　[lines]	1366×768
Active Area　[mm]	575.769×323.712
Sub -Pixel Pitch　[mm]	0.1405(H)×0.4215(V)
Pixel Arrangement	RGB vertical stripe
Weight　[g]	TYP. 870
Physical Size　[mm]	592(W) x 339.8(H) x 1.84(D) Typ.
Display Mode	TN, Normally White
Contrast Ratio	800:1 Typ. (Typical value measured at CMO's module)
Glass thickness (Array/CF)　[mm]	0.7 / 0.7
Viewing Angle (CR>20)	+80/-80(H),+80/-70(V) Typ. (Typical value measured at CMO's module)
Color Chromaticity	R=(0.648, 0.331) G=(0.265,0.595) B=(0.147,0.094) W=(0.311,0.341) *Please refer to "color chromaticity" on p.16
Cell Transparency　[%]	6%Typ. (Typical value measured at CMO's module)
Polarizer (CF side)	Anti-glare coating, 587.4(H) x 335.2(w). Hardness: 3H
Polarizer (TFT side)	587.4(H) x 335.2(w), Hardness: 3H

1.3 MECHANICAL SPECIFICATIONS

Item	Min.	Typ.	Max.	Unit	Note
Weight		870		g	
I/F connector mounting position	The mounting inclination of the connector makes the screen center within ±0.5mm as the horizontal.				(2)

Note (1) Please refer to the attached drawings for more information of front and back outline dimensions.

(2) Connector mounting position

+/- 0.5mm

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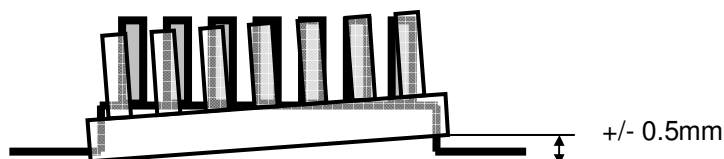
2. ABSOLUTE MAXIMUM RATINGS

2.1 ABSOLUTE RATINGS OF ENVIRONMENT (BASED ON CMO MODULE V260B1-L11)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	T_{ST}	-20	+60	ºC	(1), (3)
Operating Ambient Temperature	T_{OP}	0	50	ºC	(1), (2), (3)
Altitude Operating	A_{OP}	0	5000	M	(3)
Altitude Storage	A_{ST}	0	12000	M	(3)

Note (1) Temperature and relative humidity range is shown in the figure below.

(a) 90 %RH Max. (Ta $\leqq$ 40 ºC).

(b) Wet-bulb temperature should be 39 ºC Max. (Ta > 40 ºC).

(c) No condensation..

Relative Humidity (%RH)
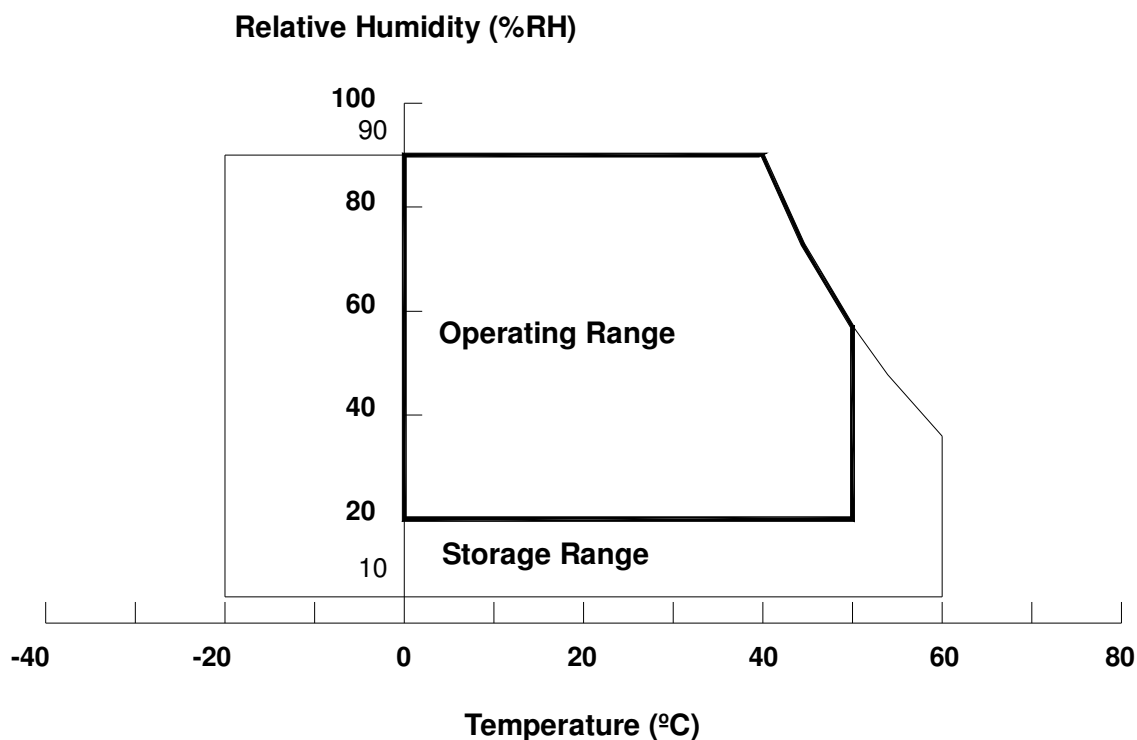
Temperature (ºC)

Note (2) The maximum operating temperature is based on the test condition that the surface temperature of display area is less than or equal to 65 ºC with LCD module alone in a temperature controlled chamber. Thermal management should be considered in your product design to prevent the surface temperature of display area from being over 65 ºC. The range of operating temperature may degrade in case of improper thermal management in your product design.

Note (3) The rating of environment is base on LCD module. Leave LCD cell alone, this environment condition can't be guaranteed. Except LCD cell, the customer has to consider the ability of other parts of LCD module and LCD module process.

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2.2 ABSOLUTE RATINGS OF ENVIRONMENT (OPEN CELL)

Storage Condition : With shipping package.

Storage temperature range : 25±5 ℃

Storage humidity range : 50±10%RH

Shelf life : a month

2.3 ELECTRICAL ABSOLUTE RATINGS

2.3.1 TFT LCD MODULE

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Power Supply Voltage	Vcc	-0.3	13.0	V	(1)
Input Signal Voltage	V_{IN}	-0.3	3.6	V	

Note (1) Permanent damage to the device may occur if maximum values are exceeded. Functional operation should be restricted to the conditions described under normal operating conditions.

Note (2) No moisture condensation or freezing.

Note (3) The control signals includes Backlight On/Off Control, Internal PWM Control and External PWM Control.

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CHI MEI
OPTOELECTRONICS CORP.

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3. ELECTRICAL CHARACTERISTICS

3.1 TFT LCD OPEN CELL

Ta = 25 ± 2 ºC

Parameter			Symbol	Value			Unit	Note
				Min.	Typ.	Max.		
Power Supply Voltage			V_{CC}	11.4	12.0	12.6	V	(1)
Power Supply Ripple Voltage			V_{RP}	—	—	300	mV	
Rush Current			I_{RUSH}	—	—	3.0	A	(2)
Power Supply Current		White	I_{CC}	—	0.2	0.25	A	(3)
		Black		—	0.5	0.55	A	
		Vertical Stripe		—	0.4	0.45	A	
LVDS Interface	Differential Input High Threshold Voltage		V_{LVTH}	+100	—	—	mV	
	Differential Input Low Threshold Voltage		V_{LVTL}	—	—	-100	mV	
	Common Input Voltage		V_{LVC}	1.125	1.25	1.375	V	
	Terminating Resistor		R_T	—	100	—	ohm	
CMOS interface	Input High Threshold Voltage		V_{IH}	2.7	—	3.3	V	
	Input Low Threshold Voltage		V_{IL}	0	—	0.7	V	

Note (1) The module should be always operated within above ranges.

Note (2) Measurement Conditions:
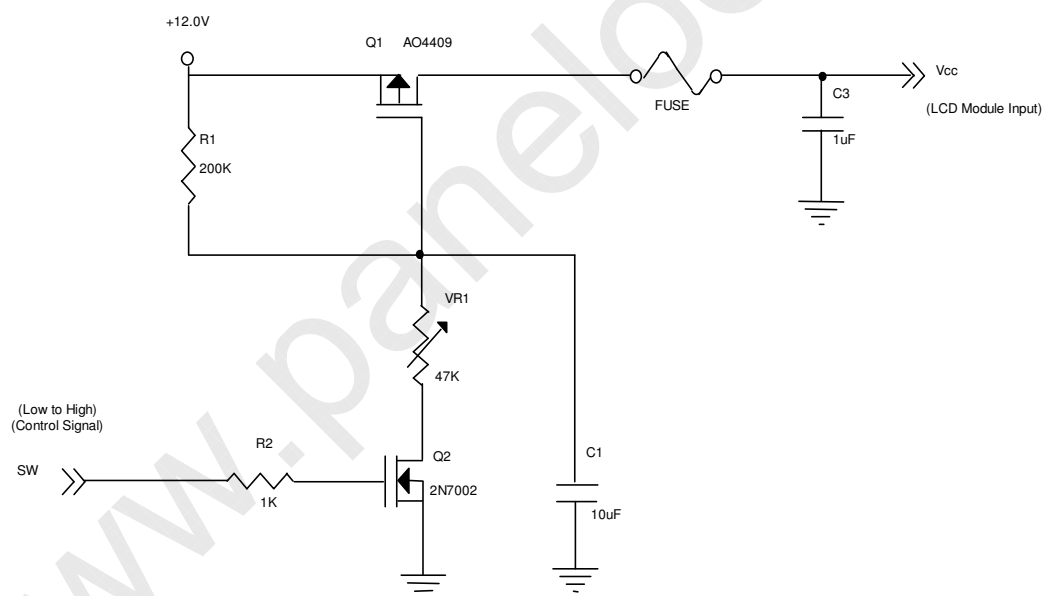
Vcc rising time is 470us

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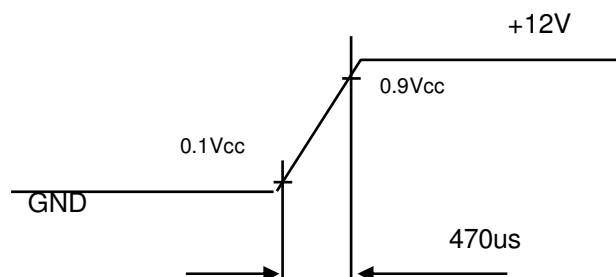
Note (3) The specified power supply current is under the conditions at Vcc = 12 V, Ta = 25 ± 2 ºC, f_v = 60 Hz, whereas a power dissipation check pattern below is displayed.

a. White Pattern
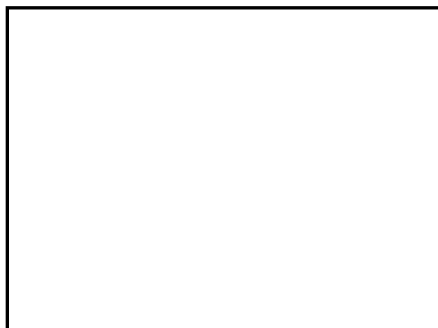
Active Area

b. Black Pattern

Active Area

c. Vertical Stripe Pattern

Active Area

R	G	B	R	G	B
B	R	G	B	R	G	B	R
B	R	G	B	R	G	B	R
R	G	B	R	G	B
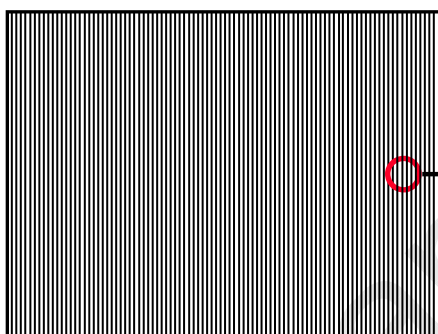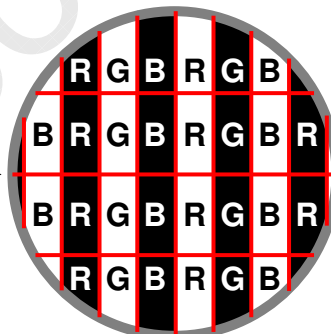
4. BLOCK DIAGRAM

4.1 TFT LCD OPEN CELL

RX0(+/-)
RX1(+/-)
RX2(+/-)
RX3(+/-)
RXCLK(+/-)
Vcc
GND

INPUT CONNECTOR (P-TWO(禾昌) 196185-30041)

TIMING CONTROLLER

DC/DC CONVERTER & REFERENCE VOLTAGE

SCAN DRIVER IC

TFT LCD PANEL (1366x3x768)

DATA DRIVER IC

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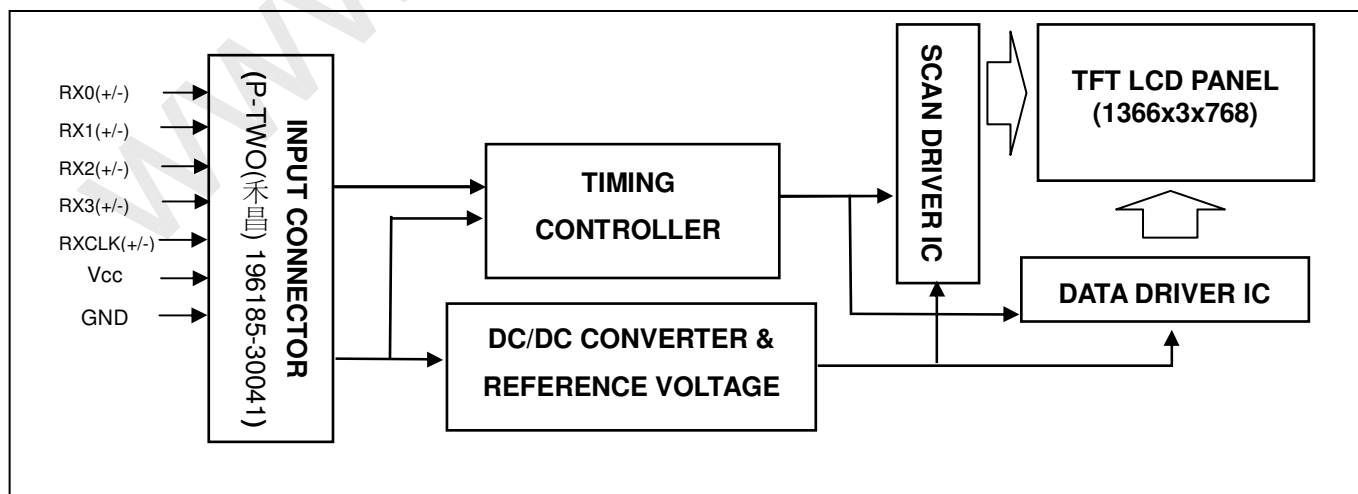
5. INPUT TERMINAL PIN ASSIGNMENT

5.1 TFT LCD MODULE

CNF1 Connector Pin Assignment

Pin No.	Symbol	Description	Note
1	VCC	Power supply: +12V	
2	VCC	Power supply: +12V	
3	VCC	Power supply: +12V	
4	VCC	Power supply: +12V	
5	GND	Ground	
6	GND	Ground	
7	GND	Ground	
8	GND	Ground	
9	SELLVDS	Select LVDS data format	(2)
10	NC	No connection	(3)
11	GND	Ground	
12	RX0-	Negative transmission data of pixel 0	
13	RX0+	Positive transmission data of pixel 0	
14	GND	Ground	
15	RX1-	Negative transmission data of pixel 1	
16	RX1+	Positive transmission data of pixel 1	
17	GND	Ground	
18	RX2-	Negative transmission data of pixel 2	
19	RX2+	Positive transmission data of pixel 2	
20	GND	Ground	
21	RXCLK-	Negative of clock	
22	RXCLK+	Positive of clock	
23	GND	Ground	
24	RX3-	Negative transmission data of pixel 3	
25	RX3+	Positive transmission data of pixel 3	
26	GND	Ground	
27	NC	No connection	(3)
28	NC	No connection	(3)
29	GND	Ground	
30	GND	Ground	

Note (1) CN2 Connector Part No.: P-TWO(禾昌) 196185-30041 or Equal.

Note (2) Ground or OPEN: Normal, High: JEIDA LVDS format

Please refer to 5.3 LVDS INTERFACE (Page 11)

Note (3) Reserved for internal use. Please leave it open.

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5.2 BLOCK DIAGRAM OF INTERFACE

R0~R7 : Pixel R Data

G0~G7 : Pixel G Data

B0~B7 : Pixel B Data

DE   : Data Enable Signal

Note (1) The system must have the transmitter to drive the module.

Note (2) LVDS cable impedance shall be 50 ohms per signal line or about 100 ohms per twist-pair line when it is used differentially.

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5.3 LVDS INTERFACE

	SIGNAL		TRANSMITTER THC63LVDM83A		INTERFACE CONNECTOR		RECEIVER THC63LVDF84A		TFT CONTROL INPUT	
	SELLVD= L or OPEN	SELLVDS =H	PIN	INPUT	Host	TFT-LCD	PIN	OUTPUT	SELLVD= L or OPEN	SELLVDS =H
24 bit	R0	R2	51	TxIN0			27	Rx OUT0	R0	R2
	R1	R3	52	TxIN1			29	Rx OUT1	R1	R3
	R2	R4	54	TxIN2	TA OUT0+	Rx 0+	30	Rx OUT2	R2	R4
	R3	R5	55	TxIN3			32	Rx OUT3	R3	R5
	R4	R6	56	TxIN4			33	Rx OUT4	R4	R6
	R5	R7	3	TxIN6	TA OUT0-	Rx 0-	35	Rx OUT6	R5	R7
	G0	G2	4	TxIN7			37	Rx OUT7	G0	G2
	G1	G3	6	TxIN8			38	Rx OUT8	G1	G3
	G2	G4	7	TxIN9			39	Rx OUT9	G2	G4
	G3	G5	11	TxIN12	TA OUT1+	Rx 1+	43	Rx OUT12	G3	G5
	G4	G6	12	TxIN13			45	Rx OUT13	G4	G6
	G5	G7	14	TxIN14			46	Rx OUT14	G5	G7
	B0	B2	15	TxIN15	TA OUT1-	Rx 1-	47	Rx OUT15	B0	B2
	B1	B3	19	TxIN18			51	Rx OUT18	B1	B3
	B2	B4	20	TxIN19			53	Rx OUT19	B2	B4
	B3	B5	22	TxIN20			54	Rx OUT20	B3	B5
	B4	B6	23	TxIN21	TA OUT2+	Rx 2+	55	Rx OUT21	B4	B6
	B5	B7	24	TxIN22			1	Rx OUT22	B5	B7
	DE	DE	30	TxIN26			6	Rx OUT26	DE	DE
	R6	R0	50	TxIN27	TA OUT2-	Rx 2-	7	Rx OUT27	R6	R0
	R7	R1	2	TxIN5			34	Rx OUT5	R7	R1
	G6	G0	8	TxIN10			41	Rx OUT10	G6	G0
	G7	G1	10	TxIN11			42	Rx OUT11	G7	G1
	B6	B0	16	TxIN16	TA OUT3+	Rx 3+	49	Rx OUT16	B6	B0
	B7	B1	18	TxIN17			50	Rx OUT17	B7	B1
	RSVD 1	RSVD 1	25	TxIN23			2	Rx OUT23	NC	NC
	RSVD 2	RSVD 2	27	TxIN24	TA OUT3-	Rx 3-	3	Rx OUT24	NC	NC
	RSVD 3	RSVD 3	28	TxIN25			5	Rx OUT25	NC	NC
		DCLK	31	TxCLK IN	TxCLK OUT+ TxCLK OUT-	RxCLK IN+ RxCLK IN-	26	RxCLK OUT	DCLK	

R0~R7: Pixel R Data (7; MSB, 0; LSB)

G0~G7: Pixel G Data (7; MSB, 0; LSB)

B0~B7: Pixel B Data (7; MSB, 0; LSB)

DE : Data enable signal

Notes(1) RSVD(reserved)pins on the transmitter shall be "H" or "L".

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5.4 COLOR DATA INPUT ASSIGNMENT

The brightness of each primary color (red, green and blue) is based on the 8-bit gray scale data input for the color. The higher the binary input, the brighter the color. The table below provides the assignment of color versus data input.

Color		Data Signal																							
		Red								Green								Blue							
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
Basic Colors	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Cyan	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Magenta	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gray Scale Of Red	Red(0) / Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(1)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(2)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Red(253)	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(254)	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red(255)	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gray Scale Of Green	Green(0) / Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Green(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Green(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Green(253)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
	Green(254)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	Green(255)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Gray Scale Of Blue	Blue(0) / Dark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Blue(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Blue(253)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1
	Blue(254)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0
	Blue(255)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Note (1) 0: Low Level Voltage, 1: High Level Voltage

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5.5 LVDS INTERFACE

SELLVDS = L or Open   (VESA)
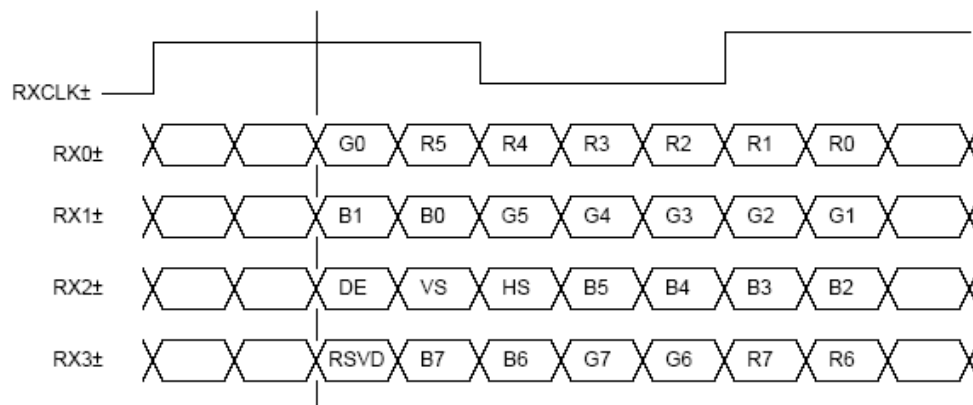
SELLVDS = H (JEIDA)
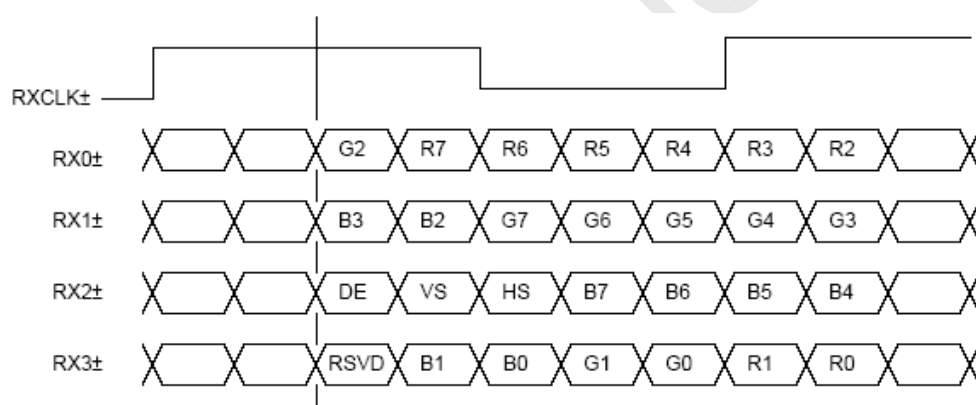
R0~R7: Pixel R Data (7; MSB, 0; LSB)

G0~G7: Pixel G Data (7; MSB, 0; LSB)

B0~B7: Pixel B Data (7; MSB, 0; LSB)

DE : Data enable signal

Notes(1) RSVD(reserved)pins on the transmitter shall be "H" or "L".

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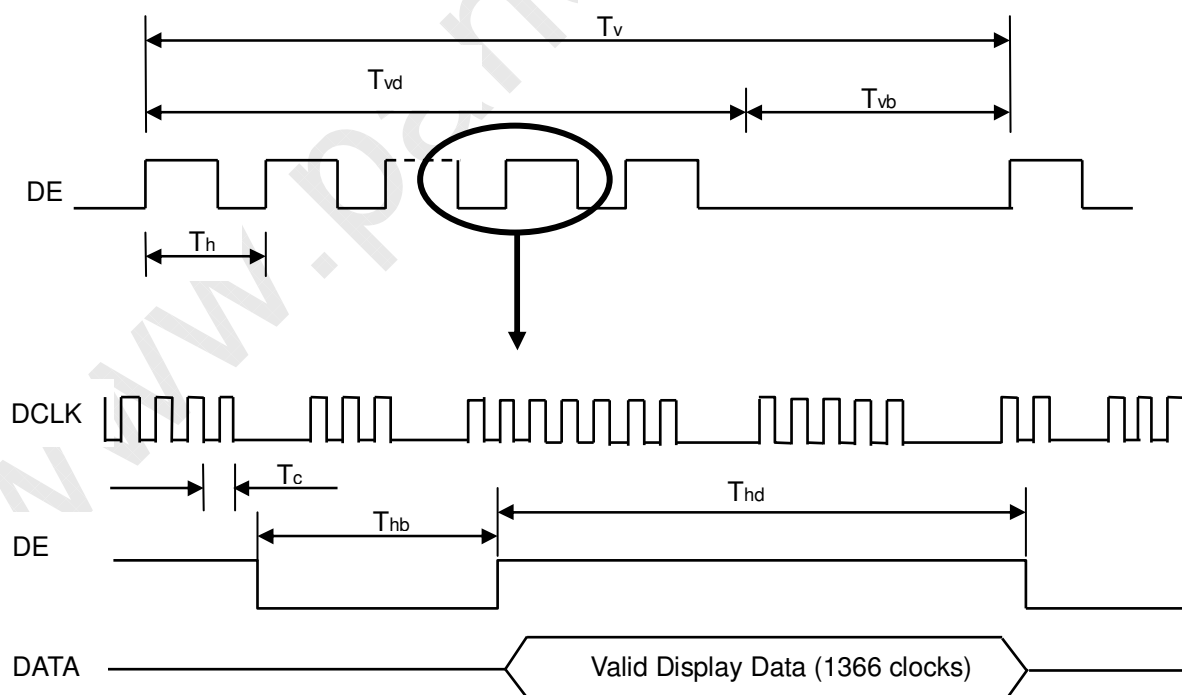
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6. INTERFACE TIMING

6.1 INPUT SIGNAL TIMING SPECIFICATIONS

The input signal timing specifications are shown as the following table and timing diagram.

Signal	Item	Symbol	Min.	Typ.	Max.	Unit	Note
LVDS Receiver Clock	Frequency	1/Tc	60	76	82	MHz	
	Input cycle to cycle jitter	Trcl	—	—	200	ps	
LVDS Receiver Data	Setup Time	Tlvsu	600	—	—	ps	
	Hold Time	Tlvhd	600	—	—	ps	
Vertical Active Display Term	Frame Rate	Fr5	47	50	53	Hz	
		Fr6	57	60	63	Hz	
	Total	Tv	778	806	888	Th	Tv=Tvd+Tvb
	Display	Tvd	768	768	768	Th	-
	Blank	Tvb	10	38	120	Th	-
Horizontal Active Display Term	Total	Th	1442	1560	1936	Tc	Th=Thd+Thb
	Display	Thd	1366	1366	1366	Tc	-
	Blank	Thb	76	194	570	Tc	-

Note (1) Since this module is operated in DE only mode, Hsync and Vsync input signals should be set to low logic level. Otherwise, this module would operate abnormally.
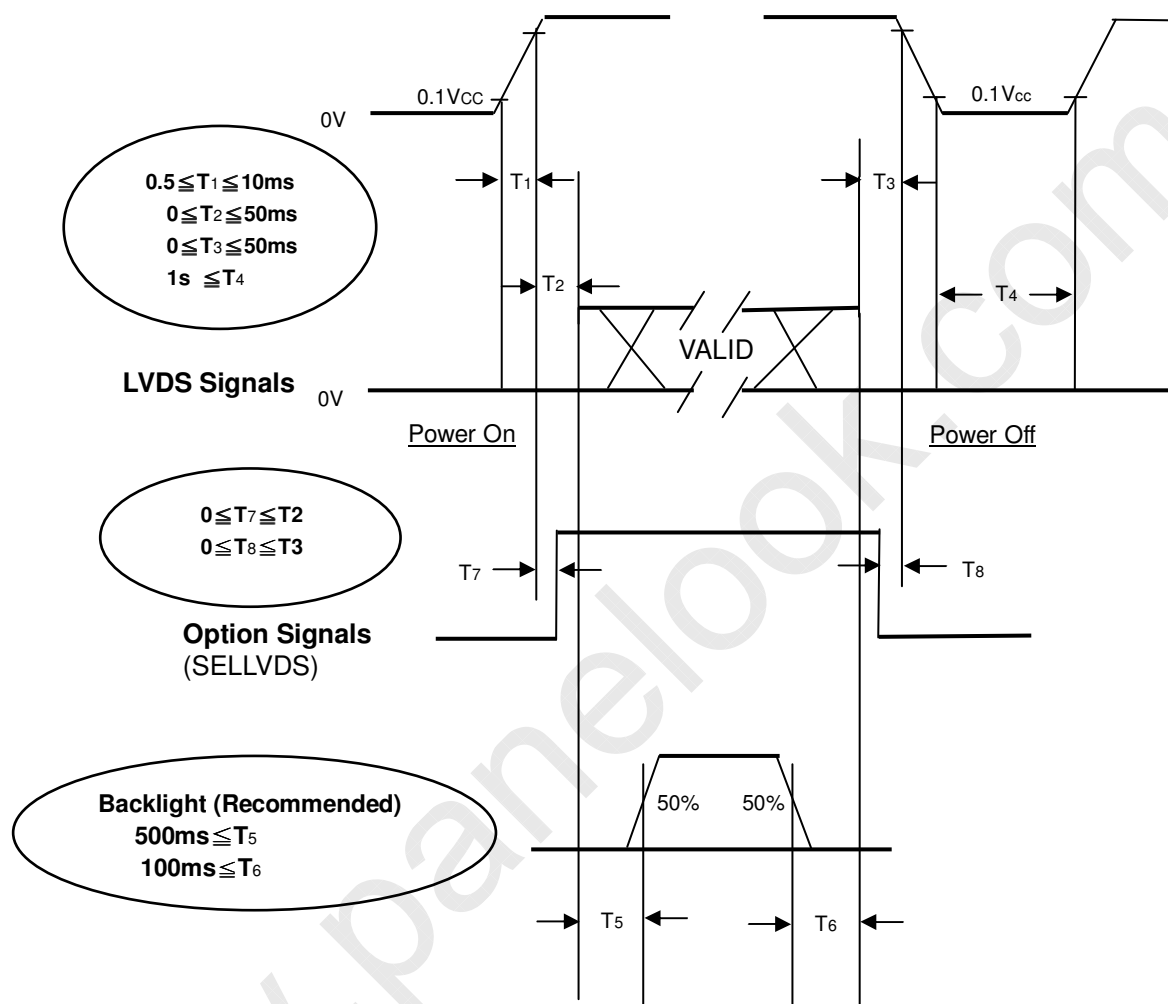
INPUT SIGNAL TIMING DIAGRAM

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LVDS RECEIVER INTERFACE TIMING DIAGRAM

Tc

RXCLK+/-

RXn+/-

Tlvsu

Tlvhd

$$\frac{1T}{14} \qquad \frac{3T}{14} \qquad \frac{5T}{14} \qquad \frac{7T}{14} \qquad \frac{9T}{14} \qquad \frac{11T}{14} \qquad \frac{13T}{14}$$

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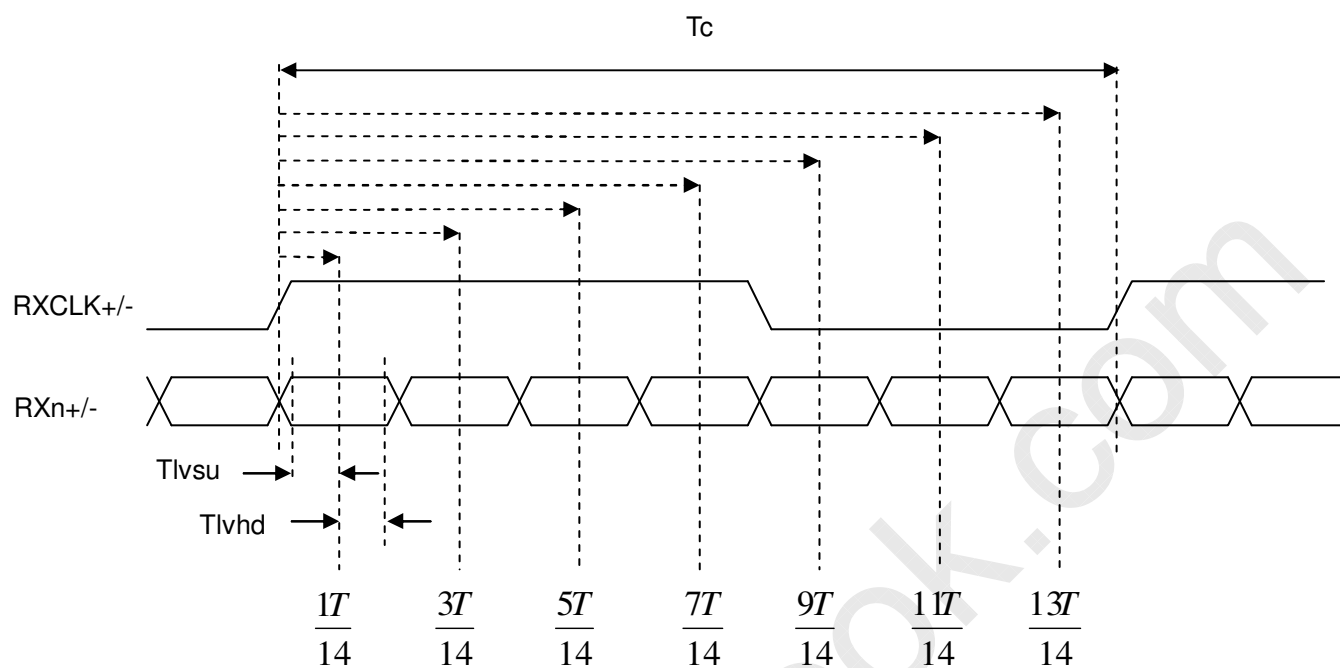
6.2 POWER ON/OFF SEQUENCE

To prevent a latch-up or DC operation of LCD module, the power on/off sequence should be as the diagram below.

$0.5 \leqq T_1 \leqq 10ms$
$0 \leqq T_2 \leqq 50ms$
$0 \leqq T_3 \leqq 50ms$
$1s \leqq T_4$

LVDS Signals

$0 \leqq T_7 \leqq T2$
$0 \leqq T_8 \leqq T3$

Option Signals (SELLVDS)

Backlight (Recommended)
$500ms \leqq T_5$
$100ms \leqq T_6$

Power On   Power Off

Power ON/OFF Sequence

Note (1) The supply voltage of the external system for the module input should follow the definition of Vcc.

Note (2) Apply the lamp voltage within the LCD operation range. When the backlight turns on before the LCD operation or the LCD turns off before the backlight turns off, the display may momentarily become abnormal screen.

Note (3) In case of Vcc is in off level, please keep the level of input signals on the low or high impedance. If T2<0,that maybe cause electrical overstress failure.

Note (4) T4 should be measured after the module has been fully discharged between power off and on period.

Note (5) Interface signal shall not be kept at high impedance when the power is on.

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7. OPTICAL CHARACTERISTICS

7.1 TEST CONDITIONS

Item	Symbol	Value	Unit
Ambient Temperature	Ta	25±2	^{o}C
Ambient Humidity	Ha	50±10	%RH
Supply Voltage	V_{CC}	12.0	V
Input Signal	According to typical value in "3. ELECTRICAL CHARACTERISTICS"		
Lamp Current (High side)	I_L	7.5mA ± 0.5	mA
Oscillating Frequency (Inverter)	F_W	58±3	KHz
Frame rate		60	Hz

7.2 OPTICAL SPECIFICATIONS

The relative measurement methods of optical characteristics are shown as below. The following items should

be measured under the test conditions described in 7.1 and stable environment shown in Note (5).

Item			Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Color Chromaticity	Red	Rcx		$\theta_x=0°$, $\theta_Y=0°$ Viewing Angle at Normal Direction Standard light source "C"	-	0.648	-	-	(0),(5)
		Rcy				0.331		-	
	Green	Gcx				0.265		-	
		Gcy				0.595		-	
	Blue	Bcx				0.147		-	
		Bcy				0.094		-	
	White	Wcx				0.311		-	
		Wcy				0.341		-	
Center Transmittance			T%	$\theta_x=0°$, $\theta_Y=0°$ with CMO module	-	6	-	%	(1),(7)
Contrast Ratio			CR			800	-		(1),(3)
Response Time			T_R	$\theta_x=0°$, $\theta_Y=0°$ with CMO Module@60Hz	-	3	-	ms	(4)
			T_F		-	5	-	ms	
White Variation			δW	$\theta_x=0°$, $\theta_Y=0°$ with CMO module	-	-	1.3	-	(1),(6)
Viewing Angle	Horizontal		θ_x+	CR≥10 With CMO module	-	80	-	Deg.	(1),(2)
			θ_x-		-	80	-		
	Vertical		θ_Y+		-	80	-		
			θ_Y-		-	70	-		

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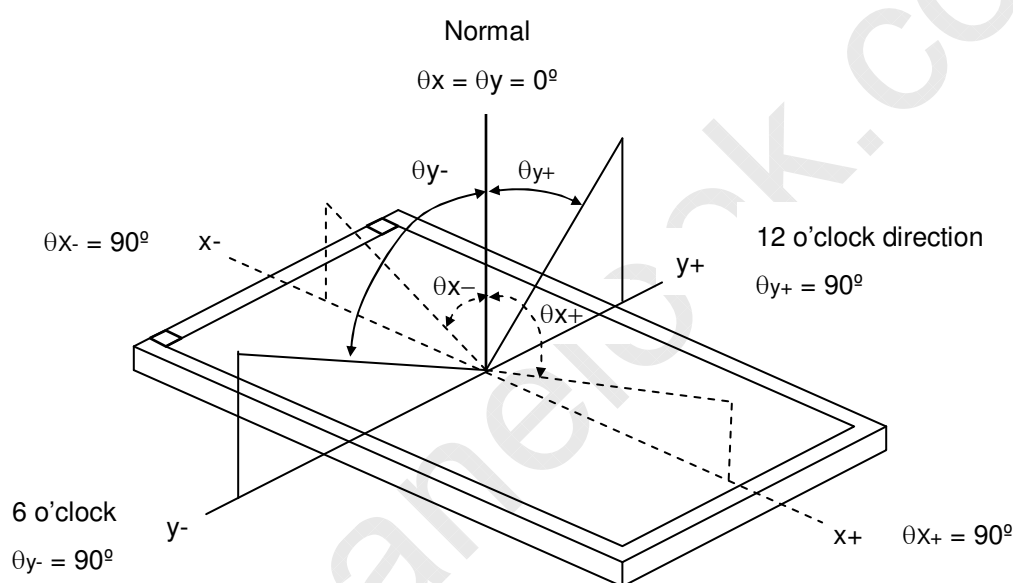Model No.: V260B1-P15

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Note (0) Light source is the standard light source "C" which is defined by CIE and driving voltage are based on suitable gamma voltages. The calculating method is as following :

1. Measure Module's and BLU's spectrum. White is without signal input and R,G,B are with signal input. BLU(for V260B1-L11) is supplied by CMO.

2. Calculate cell's spectrum.

3. Calculate cell's chromaticity by using the spectrum of standard light source "C".

Note (1) Light source is the BLU which is supplied by CMO and driving voltage are based on suitable gamma voltages.

Note (2) Definition of Viewing Angle (θx, θy):

Viewing angles are measured by EZ-Contrast 160R (Eldim)

Normal

θx = θy = 0º

θy- θy+

θx- = 90º   x-

θx- θx+

12 o'clock direction
θy+ = 90º

y+

6 o'clock
θy- = 90º

y-

x+ θx+ = 90º

Note (3) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

Contrast Ratio (CR) = L255 / L0

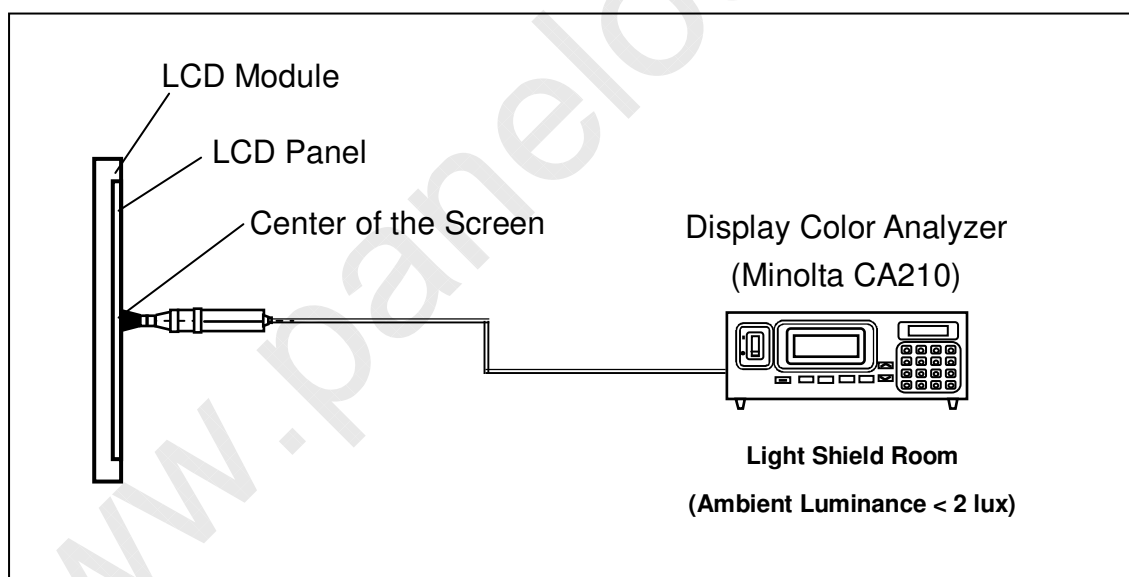L255: Luminance of gray level 255

L 0: Luminance of gray level 0

CR = CR (5), where CR (X) is corresponding to the Contrast Ratio of the point X at the figure in

Note (6).

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Note (4) Definition of Response Time (T$_R$, T$_F$):

Gray Level 255

Gray Level 255

100%
90%

Optical

Response

Gray Level 0

10%
0%

T$_R$

T$_F$

Time
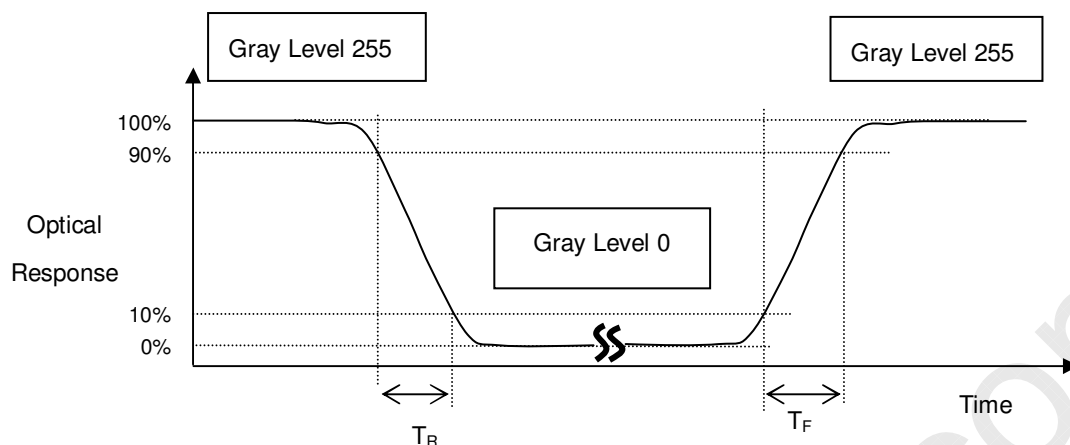
Note (5) Measurement Setup:

The LCD module should be stabilized at given temperature for 1 hour to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 1 hour in a windless room.

LCD Module

LCD Panel

Center of the Screen

Display Color Analyzer
(Minolta CA210)

Light Shield Room

(Ambient Luminance < 2 lux)

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Note (6) Definition of White Variation (δW):

Measure the luminance of gray level 255 at 5 points

δW = Maximum [L (1), L (2), L (3), L (4), L (5)] / Minimum [L (1), L (2), L (3), L (4), L (5)]

Horizontal Line

Active Area
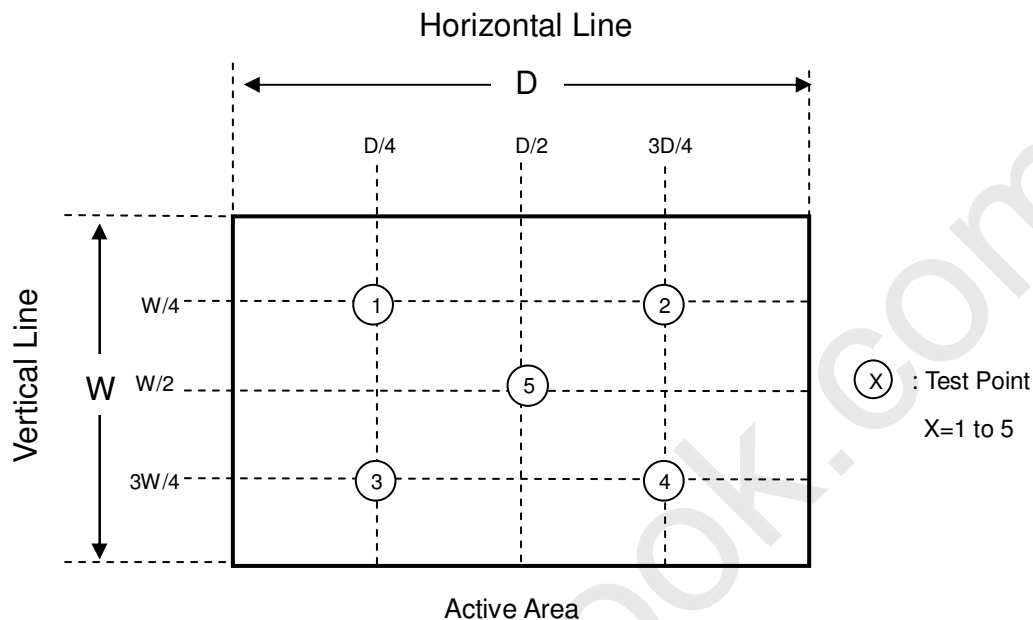
Note (7) Definition of Transmittance (T%) :

Module is without signal input.

$$\text{Transmittance} = \frac{\text{Luminance of LCD module}}{\text{Luminance of backlight}} * 100\%$$

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8. PRECAUTIONS

8.1 ASSEMBLY AND HANDLING PRECAUTIONS

(1) Do not apply rough force such as bending or twisting to the product during assembly.

(2) To assemble backlight or install module into user's system can be only in clean working areas. The dust and oil may cause electrical short or worsen the polarizer.

(3) It's not permitted to have pressure or impulse on the module because the LCD panel will be damaged.

(4) Always follow the correct power sequence when the product is connecting and operating. This can prevent damage to the CMOS LSI chips during latch-up.

(5) Do not pull the I/F connector in or out while the module is operating.

(6) Use a soft dry cloth without chemicals for cleaning, because the surface of polarizer is very soft and easily scratched.

(7) It is dangerous that moisture come into or contacted the product, because moisture may damage the product when it is operating.

(8) High temperature or humidity may reduce the performance of module. Please store this product within the specified storage conditions.

(9) When ambient temperature is lower than 10ºC may reduce the display quality. For example, the response time will become slowly.

8.2 SAFETY PRECAUTIONS

(1) If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth. In case of contact with hands, skin or clothes, it has to be washed away thoroughly with soap.

(2) After the product's end of life, it is not harmful in case of normal operation and storage.

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9. PACKAGING

9.1 PACKING SPECIFICATIONS

(1) 15 LCD TV Panels / 1 Box

(2) Box dimensions : 804 (L) X 565 (W) X 363 (H)

(3) Weight : approximately 25 Kg (15 panels per box)

9.2 PACKING METHOD
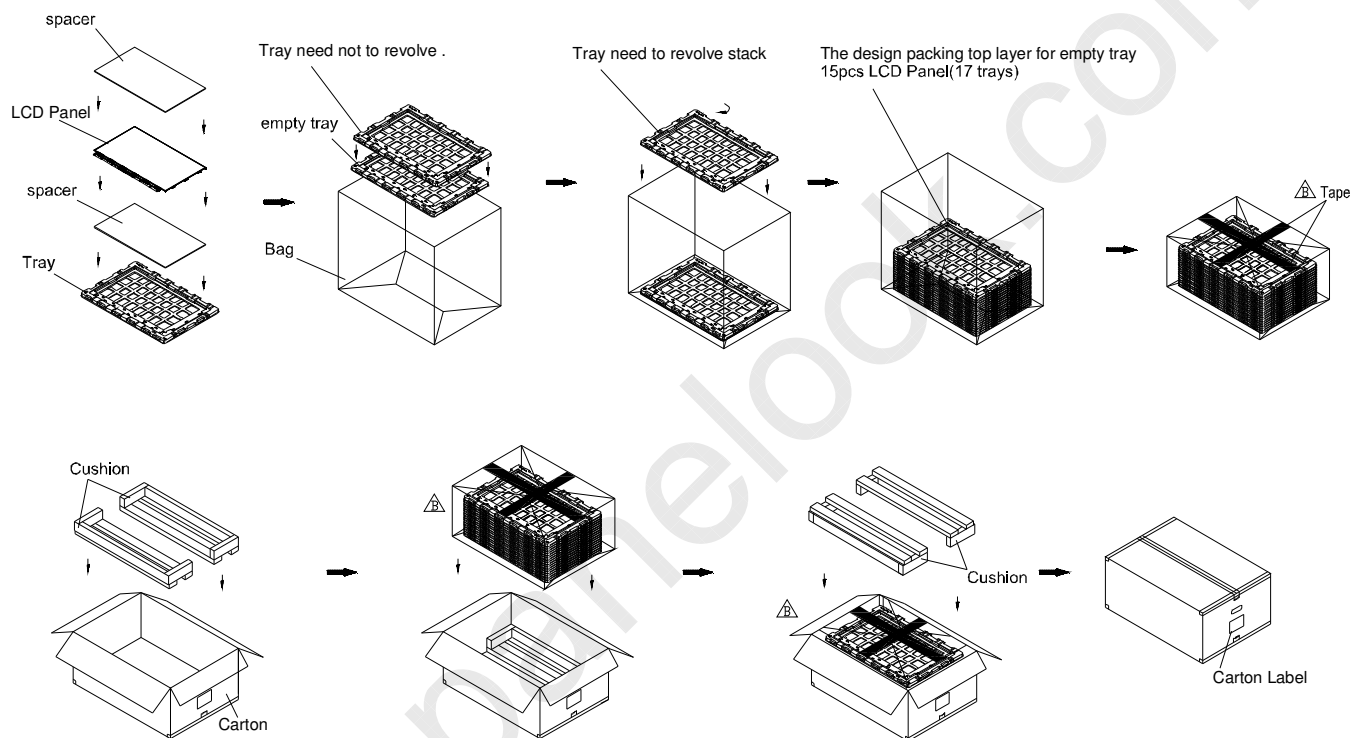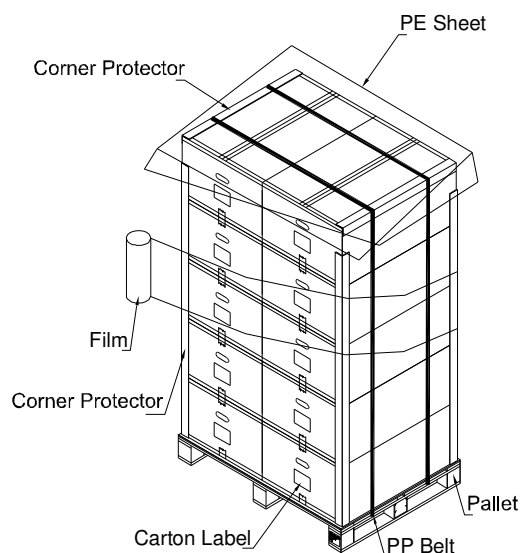
Figures 9-1 and 9-2 are the packing method

Figure.9-1 packing method

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Sea Transportation

Corner Protector:L1650*50*50mm
L800*50*50mm
Pallet:L1150*W840*H140mm
Pallet Stack:L1150*W840*H1960mm
Gross:265kg

Air Transportation

Corner Protector:L1250*50*50mm
L800*50*50mm
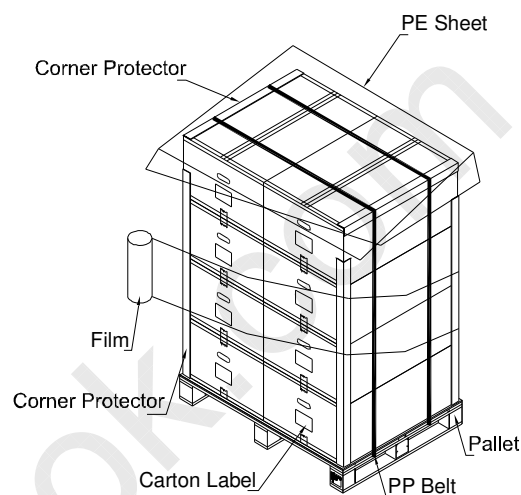Pallet:L1150*W840*H140mm
Pallet Stack:L1150*W840*H1597mm
Gross:215kg

Figure.9-2 packing method

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10. REGULATORY STANDARDS

10.1 SAFETY

Regulatory	Item	Standard
Information Technology equipment	UL	UL 60950-1: 2003
	cUL	CAN/CSA C22.2 No.60950-1-03
	CB	IEC 60950-1:2001
Audio/Video Apparatus	UL	UL 60065: 2003
	cUL	CAN/CSA C22.2 No.60065-03
	CB	IEC 60065:2001

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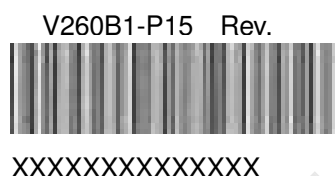Issued Date: June. 24, 2009
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11. DEFINITION OF LABELS

11.1 OPEN CELL LABEL

The barcode nameplate is pasted on each open cell as illustration for CMO internal control.

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XXXXXXXXXXXXXX
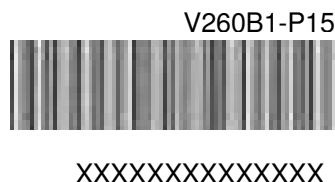
The barcode nameplate is pasted on Protector Film of each open cell as illustration for CMO internal control.

V260B1-P15   Rev.

XXXXXXXXXXXXXX

11.2 CARTON LABEL

The barcode nameplate is pasted on each box as illustration, and its definitions are as following explanation

P.O. NO.

Parts ID.

Carton ID.   Quantities   15

XXXXXXXXXXXXXX

Made in Taiwan(China)

(a) Model Name: V260B1– P15

(b) Carton ID: CMO internal control

(c) Quantities: 15

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12. Mechanical Drawing

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